Inventory Management System - Python Project Report

# 1. Introduction

This project is a simple inventory management system developed using Python and Tkinter. It is designed for small stores or warehouses to manage product inventory, perform user authentication, track sales, and generate reports. The project runs in a Jupyter Notebook environment and is beginner-friendly.

# 2. Features

* This system includes the following features:
* User Authentication with username and password
* Add, Edit, and Delete Products
* Track Inventory Levels
* Low-Stock Alerts
* Record Sales and Generate Sales Summary
* Simple and User-Friendly Graphical User Interface (GUI) using Tkinter
* Data Validation for input fields

# 3. Technologies Used

The system is implemented using the following technologies:  
- Python 3  
- Tkinter for GUI  
- Jupyter Notebook for interactive development environment

# 4. How to Use

1. Run all cells in the Jupyter Notebook in order.  
2. Use default login credentials (username: admin, password: admin123).  
3. Add products using the Add Product option.  
4. Edit or delete products by providing the product ID.  
5. Record sales and generate reports for inventory or sales.  
6. Low-stock products can be monitored using the Low Stock Alert feature.

# 5. Default Login Credentials

Username: admin

Password: admin123

# 6. Limitations and Future Enhancements

This is a basic version and does not store data persistently. Future improvements may include:  
- Integration with a database or CSV for persistent storage  
- User registration and role-based access control  
- Exporting reports to files  
- Improved UI with modern frameworks like PyQt or Kivy

# 7. Conclusion

This inventory management system provides a foundational understanding of GUI application development with Python. It is suitable for beginners looking to implement practical functionality with basic data handling and user interaction.